The JOURNAL of GEOGRAPHY

A Monthly Magazine Devoted to the Interests of Teachers of Geography in Elementary, Secondary, and Normal Schools.

RAY HUGHES WHITBECK, *Editor* LAWRENCE MARTIN, *Associate Editor*
Of the Department of Geology and Geography at the University of Wisconsin

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VOLUME XIV JANUARY, 1916 NUMBER 5

CONTENTS

PAGE

Supplying the World's Coffee - - *CHESTER LLOYD JONES* 129
The Cattle Industry in Uruguay - - - - - - - - - - - 135
Supplementary Material for Teaching Geography in Elementary Schools - - - - - - - - - - - - *J. W. HUBBARD* 136
The Sudden Death of William J. Sutherland - - - - - - - 143
Geography in Detroit Elementary Schools - *BURTON A. BARNES* 144
The Making of a Great Modern Harbor—Liverpool - - - - - - - - - - - - - - - - - - *K. W. DAVIDSON* 150
Balkan Peoples - - - - - - - - - - - - - - - - - - 153
Sugar-beet Culture and How Beet-sugar is Made - - - - - - - 155
Cattle in India and Italy - - - - - - - - - - - - - - 156
News Notes—
Geography at the Meeting of the Central Association of Science and Mathematics Teachers, Chicago - - - - - 157
The Minnesota Number of the Journal of Geography - - - - 158
Geographical Organizations Continue to Increase - - - - 158
North Dakota Council
Illinois Council
Southern Geographic Society
Virginia Geographic Society
Missouri Geographic Society
Recent Publications - - - - - - - - - - - - - - - - 160

Authors Are Personally Responsible for Opinions and Statements Expressed in The Journal

$1.00 a Year THE JOURNAL OF GEOGRAPHY 15c a Copy

V. C. FINCH, Business Manager

University of Wisconsin, Madison, Wis.

Entered at the Post Office, Madison, Wis., as Second Class Mail Matter Sept. 9, 1910

The Journal of Geography

Published Monthly Except July and August

Successor to the Journal of School Geography, Vol. V, and the Bulletin of the American Bureau of Geography, Vol. II.

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V. C. FINCH, Business Manager

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The JOURNAL of GEOGRAPHY

Volume XIV JANUARY 1916 Number 5

SUPPLYING THE WORLD'S COFFEE

By Chester Lloyd Jones

University of Wisconsin, Madison

ONE of the most remarkable developments in the increased use of tropical agricultural products is the rapid growth of the use of coffee. Formerly a luxury within the reach of only the well-to-do it has become a necessity for all classes. During the process of the change in its use the old world has ceased to be the source of supply yielding position to the American tropics. But little over one-fourteenth of the total in export trade now comes from countries outside the new world.

Brazil the Great Producer

In America up to the present time coffee raising is still predominately an industry of a single region—south central Brazil. In 1913-1914 the Brazilian production was estimated as 13,845,000 bags in a world's total of 18,690,000. Of this enormous amount 10,250,000 came from a single province Sao Paulo and was shipped from the single port of Santos, the greatest coffee-shipping center of the world. It was officially announced in July of 1915 that the crop in Sao Paulo in 1915 would be 12,000,000 bags. Ninety-nine per cent of the exports from Santos consist of coffee*. The only other city worthy of mention as a coffee port in the same class as Santos is Rio de Janeiro which ships about 3,000,000 bags annually‡. The total export from Brazil for the year ending July 31, 1915, was 13,401,515 bags.

The great coffee regions are most easily reached by taking the railway for the interior at Santos which lies at the foot of an abrupt rise leading to the plateau, the red earth of which has proved itself the finest soil in the world for producing the berry. So steep is the rise to this territory that we ascend on a railroad on which there is added to the usual engine motive power, a cable traction system which helps pull the load up from one station to another. This railroad is said to have been—length considered—the most expensive undertaking of the kind in the world. Loaded cars go down one track while empty

*Commerce Reports, Supplement, Nov. 16, 1915.

‡The Commerce Reports, September 10, 1915, report from Rio de Janeiro under date of July 26, 1915, that reliable private estimates of the Brazilian crop for 1915 place the Sao Paulo crop at 14,000,000 bags and the total for Brazil at 22,500,000 bags. The figures used in the text above are from the report cited, Commerce Reports, October 30, 1915, and the estimates of Duuring and Zoon of Rotterdam furnished by the Coffee Exchange of New York.

ones, or ones filled with inbound freight, ascend the other. So heavy and valuable are the outgoing shipments, almost entirely of coffee, that the road pays high dividends in spite of upkeep and operating costs which would under ordinary circumstances be prohibitive.

Picking and Preparing the Coffee

The coffee plantations vary all the way from holdings of fifty or a hundred acres to great *fazendas* on which the orderly rows of olive-green trees stretch away as far as the eye can reach. The harvest extends over a comparatively long season, pickings occurring practically continuously from May to September. The processes of getting in the crop are simple and require only unskilled labor. When the berries are ready for gathering the laborers pick them in wicker baskets. All ages and all colors of people are represented among the workers. Indians, Portuguese, Italians, Spaniards and even Japanese and Chinese are found in the plantations in large numbers. When picked the beans as we know them are encased in a pulpy substance. This is removed in two ways. The modern method involves the use of machinery of expensive character but the more primitive and still the usual way is to spread the berries out about six inches deep on a drying floor. There the sun's heat in two or three weeks dries the pulp which is then removed from the beans—of which there are two in each berry—by means of a hulling-machine.

When shipped to the coast the beans are in heavy hemp bags weighing when full sixty killos or 132.28 pounds each. These are taken to great storage houses where they are emptied and the beans are sorted. The interior of these enormous buildings indeed, even the whole neighborhood in which they lie is permeated by the appetizing odor given off by the green coffee. The finest grades are picked out by hand, the commoner ones are separated by great steam driven machines handling thousands of bags per hour. After sorting the coffee is again put into sacks which are stacked into great piles waiting for loading on steamers for the overseas trade. The sacks themselves are marked with a government stamp showing that the export tax on the contents has been paid. Without these marks the shipment is not allowed. Almost all the best coffees are said to be sent abroad. Some of the chief dealers in the great consuming countries, especially those in the United States, have their own sorting and storing establishments and hold their stocks of coffee in Brazil until the product is needed in the home market.

The Effort to Stabilize the Coffee Industry

So richly endowed is Brazil with lands suited to the raising of coffee that the production constantly tends to outrun the ability of the world to consume the crop at prices which will give a reasonable profit above the cost of production. It not infrequently happens in fact that a poor season will bring the grower a better money return than a year in which his trees bear exceptionally well. To eliminate the chance that the very success of the planters in their

cultivation shall not prove their undoing has been the object of various schemes undertaken by the government to stabilize the price of coffee. Efforts have been made, without marked success, to restrain the planting of new trees. Later what was known as the "valorization" scheme was put into operation. Under it the central government undertook to lend to Sao Paulo money which was raised by an issue of bonds. In all the state borrowed in this way $127,500,000. A tax of four francs per sack exported was levied to pay off the indebtedness. The government was to buy coffee and store it in years of bumper crops. Thus the amount which would be thrown on the market from year to year could be regulated and the government by reducing the supply could assure that coffee would not be sold at less than a price which would yield a reasonable profit to the grower. For a variety of reasons this plan also failed though apparently the Brazilians are even yet believers in its fundamental soundness. The rapid fall in price in recent years has caused a revival of the projects for price control. In 1912 the average price per sack was about $19.00. In 1914 it was $9.00. There is now under discussion a second valorization scheme which the planters hope may escape the unfortunate fate of the first.

The Interest of the United States in Coffee

Of all countries in the world besides Brazil probably the United States has the greatest interest in coffee. With us the concern is that of the consumer, not of the producer. We drink far more coffee than any other nation. In 1914-15 we imported 1,118,690,524 pounds of which all but 66,974,501 staid in the country for consumption. Our total imports from Brazil were 5,880,619 bags in the year ending July 31, 1915. On the average we use ten pounds of coffee per year for every man, woman and child in the country. About seven out of every ten pounds we use come from Brazil.

So much a necessity has coffee become that we have adopted toward it the most liberal of tariff policies. We admit it free from all customs charges. Whenever it is proposed to make coffee pay duty on entry the argument against "taxing the poor man's breakfast" is always powerful enough to quiet discussion. On the other hand Brazil has shown that she realizes how important our market for coffee is to her by granting us tariff treatment of a peculiarly favorable sort. It might be supposed that since our own people seem determined to have coffee tax free, that the Brazilians would decide there was no necessity for giving us in return for our market any special favors in her own trade. But they have preferred to give no reason for dissatisfaction to their best customers and since 1904 they have put us in an especially favored position in their import trade. In 1899 a law was passed by the Brazilian Congress authorizing the President to make certain tariff reductions to countries which established favorable conditions for Brazilian trade. Acting on this authority in 1904 a reduction was granted to us of 20% on the Brazilian tariff on certain named articles. The list has since

been lengthened and on flour we now have an advantage over other states amounting to a 30% reduction from the regular tariff rates. We are the only country in whose favor up to the present time the President of Brazil has seen fit to exercise his power to reduce the tariff. In fact we are the only country it seems, in whose favor it was intended the power should be exercised, for bills have been introduced into the Brazilian Congress to limit the favor to countries importing coffee to a yearly amount greater than 4,000,000 sacks. No country but the United States stands in this class.

It is easy to understand why the Brazilian public should desire to remain on good commercial terms with a country which took in 1915, 5,880,619 bags, representing a market value of more than one sixth of the total export trade. Indeed it is said that when a few years ago the Brazilian minister intimated that the concession might be discontinued, a suggestion that in that case the United States might conclude to tax coffee from Brazil was quite enough to induce assurances that no change in prevailing practice would be introduced. Under this law granting us special favors American flour, clocks, watches, paints, rubber manufactures, scales, pianos, and typewriters have come to dominate the market in the northern ports of Brazil—a condition which, as indicated above, is directly attributable to the position we hold in her coffee trade.

Other American Coffee-Growing Countries

But unfortunately for Brazil her lands are not the only ones in America which are suited to the growing of coffee. Around the Caribbean are a group of countries whose coffee production is rapidly growing and which produce in the opinion of many connoisseures a grade far superior to that from their great southern competitor. Then too these lands lie in a region where they are peculiarly accessible to the American market. Near at hand they are naturally the first area which attracts the attention of the American manufacturer ambitious to develop his export trade or to venture in foreign investments. Unfortunately therefore for Brazil she must look to these regions not only as ones which may in the future seriously cut into her coffee trade with the world at large but they are especially apt to do so in the trade with her best buyer.

Why Caribbean coffee resources have not been relied upon to a greater extent by American importers is explained in several ways. It is insisted that the Brazilian berry has so established itself with the American public that the flavors of the varieties from other countries do not commend themselves. Unsettled political conditions in some of the Caribbean countries have made the supply uncertain. The amounts purchasable, partly due to the civil disturbances so frequent there, have been small compared to that available in Brazil, therefore the tendency has been to turn to the greater market, finally adverse tariffs have turned the Caribbean coffee away from us in some instances. While Porto Rico was a colony of Spain its coffee by tariff arrangements was

largely deflected from us. As a result even at the present time we take only a small proportion of the coffee exported from our own Caribbean colony. The present French reciprocity treaty with Haiti doubtless draws her coffee toward that country, and her tariffs in her own colonies have a similar effect.

Caribbean Coffee Growing in Favor

But our failure to appreciate Caribbean coffee is passing away. Gradually our tastes are being educated to an appreciation of the good qualities of sorts other than those from Brazil. It is still true that even Porto Rican coffee goes in normal years chiefly to France and Spain, Nicaraguan coffee to France, Guatemalan to Germany and that of Salvador to France and Germany. Nevertheless we are playing an increasingly more important part in the Caribbean coffee trade. We have already taken first place in the Venezuelan exports and occupy an important position in Colombia. The war has temporarily at least put us into first place in the Nicaraguan market. Taking our coffee trade with the Caribbean as a whole in the years since 1912, an increase of $11,386,992 is registered while in the same period our importations from Brazil showed a decrease in value of $22,375,171, though the amount imported did not fall. Central America in these years increased its shipments to the United States by over 43,000,000 pounds, Colombia by 23,000,000 pounds and Venezuela by a similar amount*. This period is a short one but the tendency it shows seems not likely to be reversed especially in view of our increasing general export and import trade connections with Caribbean countries.

The more important units in coffee production in America other than Brazil are Mexico and Central America producing about 1,600,000 bags per year, Venezuela and Colombia producing about the same amount, Haiti with about 500,000 bags, and the other West Indian units producing about 225,000 bags. Though these do not make an important showing against the total from Brazil they are of significance when compared with the other sources of supply in the world and the figures of their production help to demonstrate to what a degree the coffee trade has come to depend on new world production. Outside of America the only important contributors are Africa, producing about 150,000 bags and the East Indies with about a million bags. In other words, of the world's supply in 1914-15 over fifteen-sixteenths came from the new world.

The European War Has Not Seriously Affected the Industry

At this time when the world's markets are being so seriously disturbed by the European war it is interesting to see what effect the conflict has had upon the prosperity of this distinctively American product. In none of the great producing areas of the world has the war caused serious interruption of the

*Commerce Reports, Sept. 10, 1915.

opportunity to raise the crop. There has been no important drafting off of the laborers to fight battles nor devastation of the plantations. Further, since coffee trees once established remain in bearing for a number of years, there is little effect upon the crop raised exercised by any sudden contraction of credit. The elements which might most easily affect the situation are: (1) the lack of money to pay the laborers in harvesting the crop, and the expenses attendant on its marketing, (2) the added insecurity of overseas shipments and the price obtainable in the countries of consumption.

In spite of the fact that the coffee raising countries are typically debtor countries, relying largely on loans from abroad for the current expenses of raising the crop, there seems to have been much less difficulty in getting the coffee to market than was feared. German money finances the coffee crop especially in Guatemala and Colombia and distress in both these districts was prophesied on the outbreak of the war. But the export statistics show that not far from what was to be expected reached the foreign market. In some countries marketing was interferred with by local political disturbances notably in Mexico and Haiti but the European war in general had comparatively little effect on the actual marketing.

Brazil's export of coffee during the first year of the war was only seven per cent below that of the previous twelve months. The business was disorganized during the first months of the conflict but with the defeat of the German fleets shipping connections became almost normal again, and the great use of the beverage by the armies in the field seems to have kept the market active. There were of course no direct shipments in the period to Germany, Austria-Hungary and Belgium but shipments to Denmark, Norway and Sweden were ten times as great as in 1914*. In Colombia and Venezuela, where it was reported shortly after the outbreak of war that the price of coffee was so demoralized that it would hardly pay for harvesting the crop, conditions had become about normal by July, 1915.

From Central America came varying reports but most of the countries were not seriously inconvenienced. Honduras, weakest of all, had a more prosperous season than she had experienced for years. Nicaragua, so far as her prosperity depended on the coffee trade, was almost as fortunate. It is estimated that about 93 per cent of the coffee exported leaves the country before the end of June. She had therefore marketed her 1914 crop before the war broke out and the next crop was not ready for shipment before conditions had again become stable. Though she lost her market in the central European countries the United States and the United Kingdom bought more liberally than usual so the market experienced but little difficulty. The other coffee producing countries, with the exception of Haiti, in which the revolution crippled production, gave similar reports.

*Commerce Reports, October 13, 1915 (dated September 4, 1915).

Other lines of export representing goods which are to a less degree necessities of modern life worked under serious limitations but coffee has now come to be so widely used that even such a far reaching conflagration as that which now engages the world affects its market only in a minor degree.

THE CATTLE INDUSTRY IN URUGUAY

UP to the end of the 16th century there were no domestic animals in Uruguay. In 1603 a hundred head of cattle were imported from Argentina. By 1624 they had multiplied to a remarkable extent and a settlement was founded for the purpose of hunting the wild cattle and trading in their hides. Because of poor transportation, the beef had no market value, while the skins were sent to Buenos Aires or to Spain.

Among the privileges granted the earliest permanent settlers in 1723, were a range of approximately 5000 acres and 200 head of cattle. As the accumulation of land was not prohibited, enormous estates were formed, some of which still amount to 50,000 acres, and are entirely devoted to cattle raising.

In 1754 the first 'saladero" (an establishment for salting and drying meat) was built. At the beginning of the 19th century there were more than half a dozen of these saladeros. Not until 1860 were any steps taken to improve the native cattle. Since that time English beef breeds have been introduced and are still being purchased in considerable quantities.

Formerly all of the animals ranged freely on the pastures, the limits between the various estates being marked only by boundary stones. Later the building of walls and in 1875 the construction of wire fences made enclosures which separated the various estates and sometimes subdivided them.

The export of Argentine beef began in 1780 with the first shipments of jerked or dried beef. This industry increased the price of cattle five-fold. At present there are in Uruguay 16 salting establishments, 5 preserved meat factories, and 2 cold storage establishments. In 1904 the first cold storage works were erected in Uruguay with capital raised in the country itself. They have a capacity of 400 head of cattle and 4000 sheep daily. The value of the animal products exported from Uruguay during the five years 1903 to 1907 amounted to about $170,000,000.—From the Monthly Bulletin of Agricultural Intelligence and Plant Diseases, May, 1914.

A CORRECTION.—It was recently stated in this Journal that the Twin Cities, St. Paul-Minneapolis had formed a joint Geographical Society. This was an error. Each city has its own society; L. L. Everly of the St. Paul Normal School is president of the St. Paul Society, and C. J. Posey of the State University is president of the Minneapolis Society.

SUPPLEMENTARY MATERIAL FOR TEACHING GEOGRAPHY IN ELEMENTARY SCHOOLS

By J. W. Hubbard

Normal School, Worcester, Massachusetts

DESCRIPTIONS in text books on geography are so brief and so lacking in detail that the subject needs enrichment by much supplementary study. Geography may be viewed from many angles. It may be interpreted by the study of various kinds of maps—political, physical, and relief. The distribution of cities, products, races, industries, transportation lines, climate, and surface features may be expressed by the pupil through the outline map. Books of travel, geographical readers and an unlimited wealth of illustrations available everywhere give broad views of life in all parts of the world.

Many teachers and schools would avail themselves of material that will give form and life to the skeleton of the text if they knew what to select for different grades and where it can be obtained. To furnish such information is the purpose of this paper. No claim is made that the lists given are complete or even that the items mentioned are the best of their kind; they have been selected merely as valuable sources, that have been used and tested in this school.

Books

Explanation of Abbreviations: Ed. Pub. Co.=Educational Publishing Co., Boston; Ginn=Ginn and Co., New York or Boston; A. B. Co.=American Book Co., New York; R. McN.=Rand, McNally and Co., Chicago; Appleton=D. Appleton and Co., New York; Macmillan=The Macmillan Co., New York; S. B. & Co.=Silver, Burdette & Co., Boston; H. M. & Co.=Houghton, Mifflin and Co., New York; Holt=Henry Holt and Co., New York.

A teacher ought to be provided with enough duplicate sets of books to give all pupils a chance to use them.

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Industrial and Commercial Geography, by J. Russell Smith. Holt. $4.00.

This is a superb work, very complete, covering the whole field and having many fine illustrations, maps, and diagrams.

From Trail to Railway, by Albert P. Brigham. Ginn. 50c.

The author has given an historical account of the great transportation lines which cross the Appalachian Mountains; shows how surface features have determined routes of travel.

Geographical Influences in American History, by Albert P. Brigham. Ginn. $1.25.

Points out how American history has been influenced by geography.

The Teaching of Geography in Elementary Schools, by Richard E. Dodge and Clara B. Kirchway. R. McN. & Co. 75c.

This is one of the best books that have recently appeared and ought to be read by every teacher of geography in the elementary schools, in order to get the latest views on the teaching of this subject. Extensive references for further reading are given at the end of each chapter.

Principles and Methods of Teaching Geography, by Frederick L. Holtz. Macmillan. 90c.

This is one of the late books on the subject.

Mathematical Geography, by Willis E. Johnson. A. B. Co. $1.00.

A very valuable reference on any topic in mathematical geography. The explanations are unusually clear and free from technical language.

Equipment for Graphic Expression

To give children an opportunity to express facts in a graphic way is an important phase of geography. In order to do this some equipment is necessary. The few articles mentioned in this list will make a minimum working outfit to which other things may be added if time and conditions warrant the teacher in doing so.

Outline maps

(a) United States

Station Base maps, Form E. 7 in. x 10 in. Per 100..... .15
Washington Base Maps, Form C. 16 in. x 18 in. Per 100.. .60

These are blank weather maps which show the boundaries of states and the location of all cities having weather observation stations. Their low price makes them available for very general use. Send coin or money order to Chief of the Weather Bureau, Washington, D. C.

(b) Continents of the world

Desk maps, 8 in. x 10 in. Per 100..... .50
Jennings Publishing Co. Box 47, Brooklyn, N. Y.

The simplicity and lack of too much detail make these maps especially valuable.

(c) Countries of Europe and North America

Desk maps, 8 in. x 10 in. Per 100..... .50
McKinley Publishing Co., 1619 Ranstead St., Philadelphia Pa.

(d) Wall Outline Maps of the Continents; European Countries, and Groups of the United States.

Size, 32 x 44, published by the same company. Each..... .20

Coast lines, rivers, boundaries of states, and lines of longitude and latitude are printed on heavy manilla paper. In case school officials will not furnish enough ordinary wall maps the teacher can use these to locate the necessary data.

Desk outline maps are also published by many other companies: Rand, McNally & Co., Chicago; A. J. Nystrom & Co., Chicago; Wm. Beverly Harrison, Broadway, New York; McKnight and McKnight, Normal, Ill.; Chicago Uni. Press, Chicago, Ill.

United States Puzzle Map

Published by J. L. Hammett Co., 250 Devonshire St., Boston, Mass.

A printed paper map, mounted on wood, is cut on state lines. Size 12 in. x 20 in. Children learn the name and shape of the states by fitting them together.

Colored crayons

"Crayola." J. L. Hammett Co., Boston, Mass. Per doz. boxes, 72c

Indispensable for tinting maps to show surface elevations, climatic regions, products, political divisions, and many other features.

Hectograph

Material—Shallow galvanized pan, 5/8 inch deep
Three oz. of best star or jello glue
One pound of glycerine

Break the glue into small bits, put them into an earthen dish and pour in just enough water to cover the glue. Let it stand 12 hours then place the dish in another vessel of boiling water. When the glue is dissolved add the glycerine. After it has boiled twenty minutes add six drops of oil of cloves or carbolic acid and pour it into the pan gently and slowly to avoid forming bubbles. Before using for the first time wipe the surface with a damp cloth, let it become nearly dry, then lay the "original copy" face down on the surface of the gelatine, rub smoothly into contact, let it stand five minutes, carefully remove it, and at once take the desired number of copies.

A printed outline map may be traced with hectograph ink or copying pencil to make the "original copy."

If the hectograph proves to be too soft or sticky, melt, return to the dish and boil it ten or fifteen minutes longer, add oil of cloves, pour back into the pan, and when it cools try it again.

Twenty-four hours after taking off a set of copies the hectograph may be used again without washing, but if it is to be used a second time immediately, it should be gently washed with a sponge and water. The glue and glycerine may be purchased at a paint store.

An excellent and inexpensive duplicator is the Daus Tip-Top Duplicator, $5.00. Felix Daus, 111 John St., New York.

Illustrative Material

Pictures

The teacher and pupils should constantly be on the lookout for large, clear illustrations in magazines and advertisements. The pictures may be cut out and mounted on heavy manilla paper, or cardboard, of uniform size.

Many industrial concerns issue publications and exhibits which illustrate the raw material and processes of producing their commodity. In many instances valuable information is given about the country from which they obtain their supplies. Except in a few cases this material is sent to schools upon the payment of express charges though that is not always required.

Descriptive literature and exhibits of industries

Advertisements in the form of booklets and folders, giving interesting descriptions and beautiful illustrations may be obtained without cost from railroads and steamship lines, chambers of commerce, and real estate brokers. For a large list of such material and the places where it can be obtained see the Journal of Geography, Jan. 1914 and Jan. 1915. Published by R. H. Whitbeck, Madison, Wis. The Jan. 1915, issue includes 500 titles and list of 50 educational exhibits obtainable free or at small cost. This number of the magazine is still available. 15 cents.

DEATH OF WILLIAM J. SUTHERLAND

On Thursday, Dec. 9, President William J. Sutherland of the Platteville, Wis., Normal School, dropped dead in his office. President Sutherland was one of the contributing editors of this Journal, was president of the Wisconsin Geographical Society, and Wisconsin representative on the National Council of Geography Teachers. He was author of a widely used book on the Teaching of Geography, and joint author of Practical Exercises in Geography. At the time of his death he was actively occupied with plans for extending the work of the Wisconsin Geographical Society. He was a fine type of man, interested in everything that would benefit his fellowmen,—an educator whose loss will be keenly felt in Wisconsin.

GEOGRAPHY IN DETRIOT ELEMENTARY SCHOOLS

By Burton A. Barnes
Principal Cary School, Detroit, Mich.

AT the beginning of the school year of 1914-1915, Superintendent Charles E. Chadsey appointed two committees of teachers and principals to revise the course of study in geography in the elementary schools of Detroit. A committee of five worked on the course for the third, fourth and B fifth grades, and another group of five revised the course for the A fifth and sixth grades. The two committees worked together much of the time to insure unity in the result. All the members of both committees also kept in close touch with the work of other teachers and principals in the system, and with the geography in other school systems through courses of study, pamphlets, and letters for which the committee are indebted to school people in various parts of the country.

Outline by Grades

Third Grade—B class:

I. The development of some geographic concepts
II. Home Geography
    1. Study of a farm

Third grade—A class:

I. Home geography
    1. Detroit
    2. Wayne County
    3. Michigan

Fourth grade—B class:

I. The earth as a whole
II. North America as a whole
III. The United States (New England States, Middle Atlantic States)

Fourth Grade—A class:

I. The United States (Southern States, North Central States, Plateau States, Pacific States)

Fifth grade—B class:

I. Europe
II. Canada

Fifth grade—A class:

I. South America
II. Mexico
III. Panama Canal
IV. Africa
V. Australia

Sixth grade—B class:

I. Asia
II. Islands of the Pacific
III. Europe (Southern Europe and Russia)

Sixth grade—A class:

I. Europe (Northern Europe, omitting Russia)
II. The United States

It will be noted that, as yet, no new work in geography has been provided above the A class, sixth grade. Formerly the course extended through the B seventh. The change was made because the Junior High Schools are being rapidly opened in Detroit, and the promotion into the Junior High comes at the end of the sixth. It is probable that within the next two years a more advanced course in industrial and commercial geography will be provided to follow the work outlined in this course of study.

The introduction to the new course of study is a manual of methods of teaching geography as they have been evolved in Detroit. The following quotation from the first page of the introduction gives in brief what is enlarged upon in the next twelve pages of the book.

"In the study of geography there are two things to understand:

I. MAPS

II. RELATIONS BETWEEN NATURAL CONTROLS AND LIFE RESPONSES

In the school-room, the study of maps and of relations between controls and responses, is carried on by drilling, by gathering material on topics, and by solving problems. An analysis of these three activities as participated in by groups of children studying geography shows certain powers, skills, habits which a pupil should develop. These powers, skills, habits are the specific results which are to be used as aims by teachers and pupils. In learning, then, to understand maps and relations between natural controls and life responses, the pupil should:

1. Visualize maps, and locate the points listed under "Minimum Essentials in Location"
2. Gather geographical material
3. Organize geographical material
4. Acquire general information
5. Discover problems
6. Solve problems
7. Study pictures
8. Read books of travel, travel articles in magazines, and geographical material in newspapers
9. Observe geographical phenomena in the neighborhood

10. Co-operate with others by making reports to the class, or by serving on committees to investigate and report."

From the above quotation it will be seen that an attempt has been made in the course to state specific aims in the teaching of geography. It is realized that this attempt does not result in anything very definite, but each aim is discussed at some length in the introduction, with the hope that in time, teachers will be able to analyze each aim and determine exactly what powers, skills, habits are to be cultivated, and to what degree each is to be cultivated. In other words, the course of study is so arranged and worded that if definition of aim and limitation of training, as advocated by the measurement men, are to be realized in geography teaching, they may grow from the point of view of this course. It may be that the advance in geography teaching in the next ten years will be brought about through this aim-analysis and the establishment of standards and tests. If so, we are prepared; if not, we at least have an aid to the present day teacher.

In attaining these aims, the teacher is encouraged to conduct the recitation, as far as possible, as a discussion with a purpose, rather than as a drill. The recitation is considered as an opportunity for the teacher to aid the pupils in learning how to study. Co-operative work by committees of pupils who prepare reports to the class on various subjects is emphasized in the fifth and sixth grades. In fact, every effort is made to make the recitation a life activity. In this regard, however, the committee were working under a limitation imposed upon all course-of-study makers at the present stage of progress of teaching in the schools. There is only one activity to participate in, and that is sitting around and discussing things. It is to be hoped that more methods with manual features will evolve in the near future.

With this purpose in view,—making the geography recitation a discussion,—the bulk of the material in the course is arranged in the form of topics to be discussed in class by teachers and pupils, or of problems to be solved. The topics extend all the way through the course. The problems begin in the A fifth. Following each topic and each problem are references to books found in the school building, and also to other books found in the branch public libraries. In preparing these library references a committee from the library worked in co-operation with the geography committee. Each librarian has a copy of the course, so that when a child comes to the library looking for material in geography the librarian knows what he wants and why he wants it.

The following quotations from the course of study will best explain the method of treatment of the topic and of the problem:

"A topic in elementary geography is usually a description of life responses with some attention to causes. In the lower grades the life side is to be emphasized, but in the upper grades the underlying natural causes of life conditions described should often be emphasized."

"A problem in geography is a question the answer to which expresses causal relation between natural controls and life responses."

A Typical Topic. (Third grade—B class)

Wheat-raising:

Study the production of wheat from the preparation of the soil to its consumption as food.

(a) Plowing
(b) Harrowing
(c) Sowing—seed drills
(d) Harvesting
  1. Reaping
  2. Threshing
    (a) Grain shipped to mill
    (b) Straw used for bedding stock
(e) Transportation
  1. How? (a) Wagon; (b) Rail; (c) Water.
  2. Where? (a) To store; (b) To our homes.
    Suggestion: Pictures of farming implements may be used to advantage.
(f) Field Work (optional)
  1. Examine a garden in preparation for planting
  2. A visit to a flour mill
  3. A visit to a grocery store
  4. A visit to a market
(g) Stereopticon Lesson on Wheat

See literature slides for social side of farming.

References—Tarr & McMurry, Book I, pages 67-75
Winslow, Book I, pages 2-3, 58-63, 9-13, 44-45
Winslow, Book II, page 134
Carpenter's North America, Chapter XXII
Stories of Country Life, pages 14-17, 26-27, 72-77, 82-88, 89-95
How We Are Fed, pages 7-17
Agriculture for Beginners, pages 216-217, 163-167

A Typical Problem (Sixth grade—A class)

"Give reasons for the commercial and industrial growth of England."

1. Position. Middle of the land hemisphere. See globe and map of the world.
2. Character of the people. Noted for their energy and intelligence. Skilled workmen.
3. Coastline irregular. Many fine, deep harbors. See map.
4. Climate. Westerly winds cause a mild, damp climate favorable to

the manufacture of cotton. See climate maps. Harbors open all the year.

5. Surface. Mostly low plain. Railroads and canals easily built. See physical map.
6. Mineral products. Coal, iron, limestone near each other and near the sea. See map of the distribution of minerals.
7. Raw material. Easy to obtain.
8. Smallness of country. Factory near coal fields and near shipping point.
9. Ready market. Colonies.
10. Fisheries.

References—Dodge, pages 226, 227, 229, 230
Tarr, pages 263-270
Carpenter, pages 57-64
Winslow, Book IV, pages 18-24
Brigham, pages 87, 303

Library References—Allen, Industrial Studies, Europe, page 73
Adams, Commercial Geography, page 195
Redway, Commercial Geography, pages 296, 297

Minimum Essentials

To provide for elasticity in the course, because it is to be used with classes of children under varying conditions in a large city, the most important topics and problems are starred. These starred topics and problems are the minimum essentials in content work.

The last course of study in Detroit put considerable emphasis on type studies. Previously there had been too much emphasis on map study. As a result of the emphasis on type studies the teaching had swung away from map work too far, and pupils were found surprisingly weak in the location of cities like New York or Chicago. To offset this tendency of careless content work to absorb all the time of classes, a list of minimum essentials in location was prepared. Each point of location was carefully discussed by the committee before it was placed in the list. The question asked was, "Has this place any direct relation to us here in Detroit?" A place once put in the list is repeated in all succeeding classes, so that the list for the sixth grade—A class—contains all the minimum essentials of the course.

Sixth grade—A class—Minimum Essentials in Location

Pupils should be able to locate on an unlettered map the points listed below:

North America, South America, Europe, Asia, Africa, Australia.

Atlantic Ocean, Pacific Ocean, Arctic Ocean, Antarctic Ocean, Indian Ocean.

United States, Canada, Mexico, Central America.

All of the states of the Union, Alaska, District of Columbia, and Cuba.

Gulf of St. Lawrence, Gulf of Mexico, San Francisco Bay, Puget Sound, Chesapeake Bay, Hudson Bay.

Rocky Mts., Appalachian Mts., Pike's Peak, Mt. Washington, Adirondack Mts.

Detroit River, St. Lawrence River, Mississippi River, Columbia River, Ohio River, Missouri River, the Rio Grande, Colorado River, Hudson River, Soo Canal, Erie Canal, Panama Canal, Niagara Falls.

Lake Superior, Lake Michigan, Lake Huron, Lake St. Clair, Lake Erie, Lake Ontario, Lake Champlain.

Yellowstone Park, Yosemite Park, Grand Canyon.

Detroit, Boston, New York, Philadelphia, Pittsburg, Washington, New Orleans, Galveston, Chicago, St. Louis, Cleveland, Buffalo, Cincinnati, Minneapolis, St. Paul, Duluth, Denver, Salt Lake City, San Francisco, Seattle, Los Angeles, Baltimore, Havana.

Lansing, Jackson, Pontiac, Port Huron, Ypsilanti, Ann Arbor, Mt. Clemens, Monroe, Grand Rapids, Kalamazoo, Alpena, Traverse City, Sault Ste. Marie, Escanaba, Marquette, Houghton, Ironwood, Saginaw, Bay City.

Toronto, Montreal, Quebec, Winnipeg, Vancouver.

Buenos Aires, Rio de Janeiro, Valparaiso, Andes Mts., Amazon River, Orinoco River, Cape Horn, Argentina, Brazil, Chile, Colombia.

Suez Canal, Strait of Gibraltar, Mediterranean Sea, Red Sea, Egypt, the Sahara, St. Helena, Cape of Good Hope, Cape Town, Alexandria, Cairo, Nile River, Niger River, Congo River, Zambezi River.

Canberra, Sydney, Melbourne, Hawaiian Islands, East Indies, The Philippines, New Zealand.

Japan, China, India, Siberia, Caspian Sea, Dead Sea, Himalaya Mts., Mt. Everest, Pekin, Bombay, Calcutta, Tokio, Yokohama, Hong Kong, Vladivostok, Manila, Honolulu, Jerusalem, Yangste River, Hoang Ho, Ganges River, Euphrates River.

Austria-Hungary, Belgium, England, Ireland, Denmark, France, Germany, Greece, Italy, Netherlands, Norway, Portugal, Russia, Scotland, Spain, Sweden, Switzerland, Turkey, Wales, Balkan Peninsula.

Liverpool, London, Glasgow, Edinburgh, Dublin, Belfast, The Hague, Brussels, Paris, Havre, Lyons, Rome, Venice, Florence, Genoa, Athens, Constantinople, Vienna, Geneva, Berlin, Hamburg, Bremen, Cologne, Petrograd, Warsaw, Moscow, Odessa, Madrid.

North Sea, Baltic Sea, Black Sea, Adriatic Sea, English Channel, Dardanelles.

Thames River, Rhine River, Seine River, Danube River, Volga River, Alps Mts., Mt. Blanc, Mt. Vesuvius.

Material for a Detroit Day is provided in each of the upper grades, and comparisons with home conditions are often suggested. In respect to local

geography, however, the course shares the weakness of present American courses of study. We have no text-book which properly emphasizes Detroit and Michigan. All the references must be made to books which are printed to sell in all sections of the country, and no matter what may be said about courses of study determining the character of the text-books rather than the text-books determining the character of the course of study, the truth remains that when you are making a course of study you are shackled by the books. Each city should have its own text-book written from its own view-point, because the view-point of the community is a large part of the geography of that community. This is one of the big steps in advance which geography teaching in this country must make in the future.

THE MAKING OF A GREAT MODERN HARBOR—LIVERPOOL

By K. W. Davidson
Oshkosh, Wis.

The belief is quite common among adults, and particularly prevalent among pupils, that the great harbors of the world are nature-made; that man has only to use them practically as he finds them. Few people realize that even an excellent natural harbor usually requires millions of dollars of outlay to fit it for the demands of modern commerce. From 50 to 200 million dollars have been expended on the improvement of many of the great European harbors. The following paper gives an account of the methods by which Liverpool's two hundred million dollar harbor has been brought to its present high efficiency.—Editor.

UP to the end of the eighteenth century the port of Liverpool had been improved but little. The harbor was shallow; the warehouses, dry docks, and freight docks were few in number, poor in construction, and entirely inadequate. It was out of the question for private individuals to assume the task of extensive improvements, and corporations had not reached their present commanding position. It became necessary, therefore, for the city to improve the harbor as a regular municipal duty. A few docks were built and trade was drawn in, which not only paid the interest on the sum invested and the cost of maintenance, but left a large surplus. Out of the disposal of this surplus—(it was used in the end to build St. George's Hall)—grew a series of disputes which were aggravated by the Manchester merchants.

The final result of the disputes was the passage of a Parliamentary Act in 1857 which created the Mersey Dock and Harbor board. To this board was given the complete control of the docks and harbor of Liverpool. It was incorporated, like any corporation, with the power to hold property and transact business, including the right to raise money by the issue of bonds. This organization is composed of twenty-eight members, four of whom are appointed by the national government, while the other twenty-four are elected

by those citizens of Liverpool who pay dock rates. Its authority includes the absolute control of all dock dues, rates, and fees, harbor lights, dredging, and all dock improvements. The Board serves without pay, and membership on it is considered one of the greatest honors which can be conferred upon a Liverpool business man.

When this Board took control of the affairs of Liverpool harbor it faced four obstacles to further commercial development. (1) The estuary of the Mersey River, upon which Liverpool is situated, was filled with changing currents which deposited bars in the harbor and the Great Bar at the mouth of the Mersey.

(2) The graving dockage was limited and in poor condition.

(3) The warehouses were flimsy structures and were totally inadequate.

(4) The tide rose and fell in the harbor to the extent of thirty feet.

The first defect has continued to be, in spite of careful and scientific dredging, a great check to the use of the river at all tides. At present, however, the Board maintains a thirty-five foot channel across the Great Bar, which allows the largest vessels to cross for several hours before and after flood tide. Since 1889 the Board has kept a powerful fleet of dredges almost constantly at work removing the shifting sands. In 1909 the Board had built at an expense of $750,000, a twin screw, self-propelling dredge capable of filling itself with 10,000 tons of sand in one hour. This dredge alone removed more than 10,000,000 tons during the year 1912. In addition to this boat the Board maintains four other powerful dredges. During the fiscal year ending July 1, 1912, more than 16,500,000 tons of sand were removed.

The Dock and Harbor Board handled its problem of limited and inadequate graving dockage in the same comprehensive manner in which it handled the shifting sands. Today the Board controls sixteen strictly modern graving docks.

The Board's third problem, that of inadequate freight accommodation, has been handled in an equally efficient manner. The great warehouses in connection with all the docks are now equal to the demands of Liverpool's commerce, and are fitted with the most modern handling machinery. For instance, the tobacco warehouse at the Stanley Dock is claimed to be the largest warehouse in the world,—723 feet in length, 165 feet wide, and thirteen stories high, with a floor area of thirty-six acres and a capacity of 66,000 hogsheads. It is lighted throughout by electricity and is supplied with all the latest devices for handling cargo. The wool warehouse has an actual storage capacity of 100,000 bales. The cattle trade is mainly handled at the Birkenhead docks, where the facilities for caring for dressed meat, as well as for live cattle are claimed to be the finest in the world.

The masterpiece of the Dock and Harbor Board, however, is its work in dealing with the problem which was raised by the thirty foot tide,—that of passenger and freight dockage. The tide brought into use a unique system

of docks for the loading and unloading of vessels. There are two distinct types of docks: one is used for the passenger liners, and the other by the freight boats. For the discharge of passengers the liners use floating landing stages. The largest stage, Prince's Landing, which was built in 1907, is 2463 feet in length. It is supported by iron pontoons, held in position by eight hinged bridges connected with the mainland.

In order to realize what a great part the improvement in the freight docks has played in Liverpool's commercial growth, one must first have an idea of the great problem of the tide. It was not altogether a question of water depth. It was obviously unsafe to allow a vessel to rest upon the bottom twice a day at low tide without support. Yet, even if a sufficient depth of water was maintained, the fact that a vessel rose and fell thirty feet twice a day would greatly interfere with loading and unloading.

The solution of the problem was the invention of an obscure Liverpool engineer, who, more than a century ago, drew the first plan of the tide docks. These docks are built on the principle of our locks. When a ship enters one of the docks at flood tide, gates are closed behind it and thus, by means of the constant water-level which the gates maintain, practically all the advantages of a tideless harbor are obtained. When the ship is ready to leave her dock, the water-level is lowered to that of the outside harbor. In this way the loading and unloading of ships is greatly facilitated.

As in the cases of dredging and graving dockage, the Board has made very extensive improvements in the freight docks. At present it controls 28 docks whose water area is 560 acres, and whose quayage is 27 miles, representing an outlay of approximately $200,000,000. In 1907 under permission of Parliament, the Board began the construction of the largest of the wet docks. This is of such size as to accommodate four ships with lengths up to 1100 feet and of 120-foot beam. The cost was $16,000,000; its gates alone costing $8,000,000. The Board started work on the Gladstone Dock in 1908, authorizing for its construction about $25,000,000.

At present the Board has supervision over the entire harbor of Liverpool, which includes the docks on the Birkenhead side of the harbor. This great harbor has a water area of 4090 acres, and an average mid-stream depth of 40 feet. In 1913 it handled exports and imports amounting to the enormous sum of 2,000 million dollars.

Through its far sighted policy and improvements the Dock and Harbor Board has raised Liverpool to the position of the fourth world port in the value of commerce. Starting with a shallow, bar-filled harbor the Board has produced a harbor that will easily float the largest vessels. Given a few poorly equipped docks and warehouses it has produced model harbor facilities. It has given to the harbor a set of docks and warehouses of the most durable construction,—docks and quay walls of masonry or concrete; sheds and warehouses of steel, stone, or brick,—and has connected the whole system of docks and warehouses with the national railways by an eighty-mile electric

railway. The land area of the Dock Estate has been increased from a few small holdings to 1,677 acres. The general receipts of the Board from the docks reach nearly $10,000,000 a year. Through this method of improvement and management the Mersey Dock and Harbor Board has in 56 years raised Liverpool to one of the great world ports, a port which always keeps a few years ahead of the demands of commerce both in size and capacity of accommodations.

REFERENCES

The Development of Commercial Ports, by J. P. Goode.
An Inspection of European Ports, by J. A. Conry.
How Commercial Success may be obtained for Philadelphia.
House of Commons, Accounts and Papers, Vol. 63.
Report on European Dock Yards, by Philip Hichborn, U. S. N.
Annual Statement of Navigation in the United Kingdom.

BALKAN PEOPLES

IN a new book, entitled *Geographical Aspects of Balkan Problems,* Marion I. Newbigin, editor of the Scottish Geographical Magazine, discusses the racial characteristics of the Balkan peoples. The following paragraphs are excerpts from the book, though, in most cases considerably abridged.

Balkan Peoples.—Apart from the representatives of alien peoples, of which the Armenians and the Jews are the most numerous, there are in the peninsula no less than six separate races. These are the Albanians; the Vlachs, or nomad shepherds—usually regarded as at least nearly akin to the Roumanians; the Greeks; the Serbs; the Bulgars; and the Osmanli Turks. In some parts of the peninsula, notably in Macedonia, all six races are represented.

Albanians.—It is exceedingly difficult to make a nation out of a people whose chief amusement is to shoot their own brethren, members of rival clans, at sight. The game, which is conducted according to very strict rules, is undoubtedly one of a most thrilling nature—far superior, one would imagine, to fox-hunting in excitement; but it scarcely conduces either to social stability or to social development, and one can hardly blame the Serbs for feeling that it is unreasonable that they should be shut out from the Adriatic in order to provide the Albanians with extensive man-hunting coverts. There is, further, no evidence that the Albanians want to be a nation, while one would suppose that with judicious treatment they might well, like the Highlanders of Scotland, become useful elements in another nation.

The Albanians are generally engaged in the pastoral industry, sheep and goats, as was to be expected under the physical and economic conditions, predominating. The general insecurity and the difficulty of communication makes trade insignificant, and the demands of the people are small.

As there is little government, and justice is confined to the rough method of the blood feud, the family tie is necessarily strong, and the family—in the patriarchal sense, occupies a fortified dwelling, perpetually prepared for a siege.

The Vlachs.—The Vlachs are—or were—nomad shepherds, having temporary homes both in the mountains, where they pass the warmer period, and in the plains, coastal or interior, where they spend the winter. The Vlachs who keep this primitive nomadism own no mountain-pastures of their own, and the increasing rents are a great obstacle to their prosperity. The result is that they tend more and more to lose their characteristic nomadism, and settle down in villages.

The Serbs.—Serbia is an agricultural and pastoral country, whose people are predominantly, though to a decreasing extent engaged on the land. Owing to the marked subdivision of the land, there is no pauperism, though there is little wealth. All the attributes of a democratic agricultural community appear.

Serbia's ambitions in the direction of the Adriatic were frustrated by the Powers, who insisted upon the erection of an independent Albania, and thus concentrated the aspirations of Serbia, Bulgaria, and Greece alike on the north-western corner of the Aegean. This led, naturally enough, to quarrels among the three larger Balkan States, and while Serbia and Greece agreed to adjust the questions at issue between them, their settlement was to some extent at the expense of Bulgaria, whose disappointment led her into the short, and to her disastrous, campaign of 1913.

Among Serbia's important markets for her livestock are Naples and Genoa. She wants, and wants intensely, to increase her trade with Italy, to follow a line of development which would diminish risk of friction either with Greece or with Bulgaria.

The Greeks.—The Greeks have a glorious literary tradition, and a rich language, with a single alphabet. There are several Albanian alphabets. Further, their commercial relations make their language of importance outside the limits of their own race, a marked contrast to the Albanians, among whom the dialect of the northern groups does not even suffice for communication with the southern ones, and is useless for wider purposes. The sinking of the old Aegean continent has given to Greece that facility of communication which is denied to the other States. Her destiny lies upon the sea, for it is the sea which has made her possible and therefore her demand is ever for more and more coast-line.

The Turks.—To the geographer the expulsion of the Turk from the peninsula can be justified on the ground that he has failed to utilize the land which he has held so long, and on this ground alone. He has been within the peninsula a parasite, chiefly upon the ploughing peasant, and the effect has

been to implant in the mind of that peasant a passion for agriculture, for the undisturbed possession of a patch of freehold, which is probably as strong here as it has ever been in the world.

SUGAR BEET CULTURE AND HOW BEET-SUGAR IS MADE

The fields to be planted to sugar beets are first thoroughly fertilized. The land is plowed about ten inches deep in the fall if possible. Sugar beets require deeper plowing than most crops. In the spring the ground is harrowed, and the beet seed is then drilled in rows eighteen inches apart, twenty pounds of seed being drilled to each acre. The beet seed is obtained by the factory from Germany and Austria, and sold to the farmers at cost, usually ten cents per pound. When the beets are up and show the third or fourth leaf they are "thinned," leaving one beet in a place eight inches apart. The leaves of the beets gather the sugar from the atmosphere by the aid of the light and deposit the sugar in the root, none of it coming from the soil; hence the fields are kept clear of weeds and foul growth, which would shade the beets and reduce their sugar content. Most fields are cultivated several times during the season and hoed by hand at least twice. The beets usually begin to ripen about the first of September, and samples are taken every week by the factory to determine when the beets are ready to be pulled. When the beets are ripe as determined by the tests, i. e., when the percentage of sugar is high enough, the beets are plowed up.

Two factors are considered before the factory instructs the farmer to plow up his beets, first, the per cent of sugar in the beet; second, the purity of the beet. By the purity is meant the amount of sugar in the beet as compared with the total amount of salts present. Contained in the beet are substances in solution other than sugar, as porteins, nitrogenous matters, etc. It is the presence of these substances that makes sugar extraction expensive. They also decrease the amount of sugar that can be extracted, as these impurities must not pass into the sugar. Beets must have at least an 80 per cent purity to be fit for sugar making. After the beets are plowed out the tops are cut off just below the crown of the beet, so as to remove any portion which grew above the ground as such portion of the beet contains but a very small percentage of sugar. This is the first and only time the beets or their product are touched by human hands until after the sack of sugar has been opened at the place of consumption. Samples are taken by the factory from each wagon load of beets delivered by the farmers, and conveyed to the beet laboratory, where it is tested for its sugar content and purity. The farmers receive fifty cents per ton additional for all beets testing over sixteen per cent in sugar.

The beets are stored at the factory in four long sheds, from which they are flumed into the factory as needed. They are given a thorough washing before being sliced.

From the weighing scale the beets pass to the slicers where with triangu-

lar knives they are cut into long slender slices which look something like "shoestring" potatoes. These slices drop through a chute into a series of cylindrical vessels. After passing through the entire series of vessels, the water has become rich in sugar, of which it contains from twelve to fifteen per cent, depending upon the richness of the beets. The juice is then drawn off and is called diffusion or raw juice. The beet pulp is pumped out of the factory into bins, from which it is fed to stock as wet pulp. The warm raw juice drawn from the diffusion battery is then pumped into the carbonation tanks and treated with about ten per cent milk of lime. From the carbonation tanks the juice is forced through filter presses and is again treated with carbonic acid gas, again filtered, and passes to the evaporators, large air-tight vessels in which the juice is boiled out at a low temperature in a partial vacuum.

After considerable thickening by this evaporation minute crystals begin to form. The mass of crystals from the vacuum pans with syrup around them is let out of the pans into a large open vessel, beneath which are the centrifugal machines. Centrifugal force drives the syrup out through the screen holes leaving the white crystals of sugar in a thick layer on the inner surface. Warm dry air is drawn through and takes the moisture out of the sugar, which is now ready to be put into bags.

CATTLE IN INDIA AND ITALY

The place of cattle in connection with agriculture is very different in India from that which it occupies in European countries. On the other hand, bullocks are universally used for all operations for which horses or machinery are used in Europe, and the cow and her various products are held in superstitious esteem everywhere except on the northeastern frontier. Beef, however, is rejected as food absolutely by Hindoos and largely by Mohammedans out of sympathy, with the result that breeding, grazing, fodder crops and even dairying are generally neglected. Working bullocks are fed somehow, but cows are left to pick up what they can, and useless animals are allowed to compete for the scattered food available in the hot season. Buffaloes are everywhere in demand for their milk, which is richer than that of cows. It is only in the marshy tracts that they are used for agriculture. No sanctity attaches to the buffalo.—From the Oxford Survey of the British Empire, Volume 2.

The Italian dairy industry depends chiefly on sheep and cattle. The scarcity of cattle, which is more important in milk production, is quite evident both in actual number and in number relative to the population, when compared with various other European countries. More than half the total number of dairy cows are found in the valley of the Po. Of these over one-fourth are found in Lombardy, where the density of cattle is greatest. Lower Lombardy, which includes fertile irrigated plains, is the zone of most intensive milk production. Owing to irrigation, four crops of hay may be obtained

annually and on certain fields near Milan and Pavia, the number rises to 7 or 8. The quadrangle bounded by the rivers Ticino, Po, and Adda, and the parallel running through Milan, is characterized by its dairy farming, the milk production per unit area or per capita being higher than in any other part of the world.

Sheep are most abundant in the southern Adriatic region. In a general way it may be said that the number of cattle per acre decreases going from north to south, while the number of sheep per acre increases. Goats also abound in the southern Adriatic region.

Even the most modern and up-to-date dairies of Italy are very modest when compared with the large establishments of other countries. About five-sixths of the total milk production of Italy is turned into cheese, butter, and their by-products. Among the most famous of Italian cheeses are Stracchino, Gorgonzola, and Grana. Stracchino and Gorgonzola cheese are produced chiefly in Lombardy. Certain less well known cheeses are made from sheep's milk.—From the Monthly Bulletin of Agricultural Intelligence and Plant Diseases, July, 1914.

NEWS NOTES

THE Geography section of the Central Association of Science and Mathematics Teachers met in Chicago, November 26 and 27. Following is the program:

Geography as a Preparation for Citizenship, R. H. Whitbeck, University of Wisconsin.

Economic Importance of Glaciation, Wm. H. Haas, Northwestern University.

When the Coal is Gone, What then? (Illust.), J. Paule Goode, University of Chicago.

Symposium, Economy in the Teaching of Geography in the High School—

1. Follow-up of the Work in the Grades, Miss Zonia Baber, University of Chicago.
2. Physiography and Commercial Geography, Miss A. E. Aitchison, Iowa State Teachers College.
3. Laboratory and Recitation, Miss H. Jennings, Shortridge H. S., Indiana.
4. Double Periods, J. M. Larke, Joliet Township High School.
5. Trip Around the World on the 40th Parallel, D. C. Ridgley, Ill. State Normal University.

Committee Report—Present Status of Physiography, C. E. Peet, Lewis Institute, Chicago.

General Science in the First Year, J. C. Hessler, Milliken University.

Reactions of First Year Students to General Science,

Miss Frances Abbot, Springfield, Ill.
Miss Ellen T. Sullivan, La Grange, Ill.
Miss Meta Mannhardt, Evanston, Ill.

The February number of the Journal of Geography will be a special MINNESOTA NUMBER, prepared by Professor C. J. Posey of the University of Minnesota, and a corps of teachers, geographers, and others. It will be double the usual size of the magazine and will be a highly valuable collection of papers on Minnesota geography. Single copies, 15 cents; 6 copies, 70 cents; 10 or more copies to one address, 10 cents each. Send advance orders early, as the edition will be practically limited to the regular issue plus advance orders. See announcement in advertising section of this magazine.

GEOGRAPHICAL ORGANIZATIONS CONTINUE TO INCREASE

THE NORTH DAKOTA COUNCIL OF GEOGRAPHY TEACHERS

A meeting of the teachers of geography was held during the recent session of the North Dakota Educational Association to consider plans for the betterment of the teaching of geography and for the encouragement of the study of the North Dakota field. Much interest was shown in the plan for a National Council of Geography Teachers, and a state council for North Dakota was organized among those joining the national organization. The following officers are chosen for the initial year: President, Howard E. Simpson, University, North Dakota; Vice-president, Miss Lura Perrine, Valley City State Normal; Secretary-treasurer, Miss Huldah Winsted, Minot State Normal School. Annual meetings will be held in affiliation with the State Educational Association, and an invitation is extended to all teachers of geography and to all others especially interested in this subject who live in North Dakota to communicate with the officers and to affiliate themselves with the council.

HOWARD E. SIMPSON.

ILLINOIS COUNCIL OF GEOGRAPHY TEACHERS

In July, 1914, a group of geographers, who attended the science section of the National Education Association at St. Paul, planned for the organization of a National Council of Geography Teachers. This plan received the cordial approval of the Association of American Geographers at their annual meeting in Chicago in December, 1914. The inaugurating committee of the National Council proposed the formation of State Councils of Geography Teachers to bring the many teachers of geography throughout the states into closer touch with the movement. Miss Mabel C. Stark, of the Illinois State Normal University at Normal, Illinois, has been appointed leader of the movement for Illinois.

The cause of the State Council was presented by the chairman at the Geography Section of the High School Conference held at the University of Illinois, November 19 and 20, and also at the Earth Science Section of the Central Association of Science and Mathematics Teachers in Chicago, November 26 and 27. The geographers present at these meetings gave hearty support to the movement.

The National Council has a yearly membership fee of $1, which includes subscription to the Journal of Geography, the official organ of the council. It has been suggested that for the present at least members of the Illinois Council of Geography Teachers be given a chance to become (1) just members of the State Council at a yearly fee of 25 cents, or (2) both State and National Council members at a fee of $1.25, including subscription to the Journal of Geography.

Your name and fee, either for membership in the State Council or for State plus National membership, may be sent for the present to the chairman of the State Council.

Your suggestions and enthusiastic co-operation in this movement for a "bigger and better geography" are earnestly invited.

MABEL C. STARK.

THE SOUTHERN GEOGRAPHIC SOCIETY

Plans for the extension of the work of the Southern Geographic society were discussed at a meeting of the board of directors of the society recently in Knoxville. Dr. C. H. Gordon, of the University of Tennessee, president, presided over the meeting, which was an enthusiastic one.

Arrangements have been practically completed for the organization of a branch of the society in Nashville. Efforts will also be made to form societies in Chattanooga, Memphis, Atlanta, New Orleans, Birmingham and other southern cities.

The directors also discussed the course of lectures and visatures to be given at Market Hall during the winter months. The first visature will present views of the Yellowstone National park, and the lecture will be delivered by Dr. Gordon.

It is expected that the first of the lectures will be given early in January.

THE VIRGINIA GEOGRAPHIC SOCIETY

Miss Loulie C. Kelley of the John Marshall High School, Richmond, Va., president of the society writes: "Virginia has a Geographic Society and hopes to do some good work this year." Mr. E. E. Smith is secretary.

MISSOURI ORGANIZES

Editor of the Journal of Geography:

I was interested to note in the last issue of the Journal of Geography that organizations of geography teachers had been perfected recently in several states. Lest you think Missouri is unprogressive I hasten to inform you that the Executive Committee of the Missouri State Teachers Association at the last meeting in Kansas City saw fit to grant the request of several of the geography teachers of the state to recognize a distinct department of geography as part of the State Teachers Association.

Our petition making the request was signed by a large number of teachers, including professors Marston of the Springfield Normal; Lewis Thomas of Drury College; Phillips of Warrensburg Normal; Cauffield of Marysville Normal, and Roberts of Cape Girardeau Normal. An organization has been effected and A. E. Parkins was elected chairman and C. E. Marston of Springfield was elected secretary.

The Program Committee is now at work on a program for next year. Everything looks forward to a successful campaign to better the teaching of geography in Missouri. The editor of the Missouri School Journal has offered his paper as a medium for the dissemination of information connected with the affairs of the department. A. E. PARKINS.

RECENT PUBLICATIONS

TEXT-BOOK OF GEOLOGY.

Part I—Physical Geology, by L. V. Pirsson, vii+444 pages, 6x9; folding colored map. Cloth, $2.25 net.

Part II—Historical Geology, by Charles Schuchert, viii+622 pages; folding colored map. Cloth, $2.75 net.

Complete in one volume, x+1051 pages. $4.00 net.

John Wiley & Sons, 432 Fourth Ave., New York.

The authors of the Text-Book of Geology have for several years been giving an introductory course in geology. Such a course has to meet the needs of students of other sciences, and at the same time be a foundation for those students who wish to continue studying in geology.

In the first part of the book the author presents the facts and principles of physical geology in a most logical and scientific manner. There is little in it that is new for a geologist, but the excellent organization and manner of presentation make the book easy to read and understand. The maps, figures, and pictures are special features which will help the new student of geology.

Historical geology is usually difficult for the beginning student. This is true because the student often lacks training in zoology and botany. The author has learned this by experience and "The attempt has been made," with success, "to meet these difficulties . . . by the introduction of special chapters and appropriately added matter in zoology, botany, processes of evolution, etc., designed to supply the student with the general knowledge needed as a basis for the proper appreciation of the paleontological part, and by a choice of details which are typical rather than a synopsis of the whole field. Also, the introduction of some matter relating to the history of geology as a science, and of its founders, gives the student the proper historical perspective." M. K. D.